Volunteer Lake Assessment Program Individual Lake Reports
CANAAN STREET LAKE, CANAAN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,571	Max. Depth (m):	6.7	Flushing Rate (yr¹)	0.8
Surface Area (Ac.):	303	Mean Depth (m):	3	P Retention Coef:	0.78
Shore Length (m):	6,400	Volume (m³):	3,587,000	Elevation (ft):	1142

TROPHIC CLASSIFICATION

Year	Trophic class
2005	OLIGOTROPHIC
2008	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

CANAAN ST LAKE - CRESCENT CAMPSITES	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
CANAAN ST LAKE - CAMP WAR BONNET BEACH	E. coli	No Data	No Data for this parameter.
CANAAN STREET LAKE - TOWN BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.
CANAAN STREET LAKE - TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.
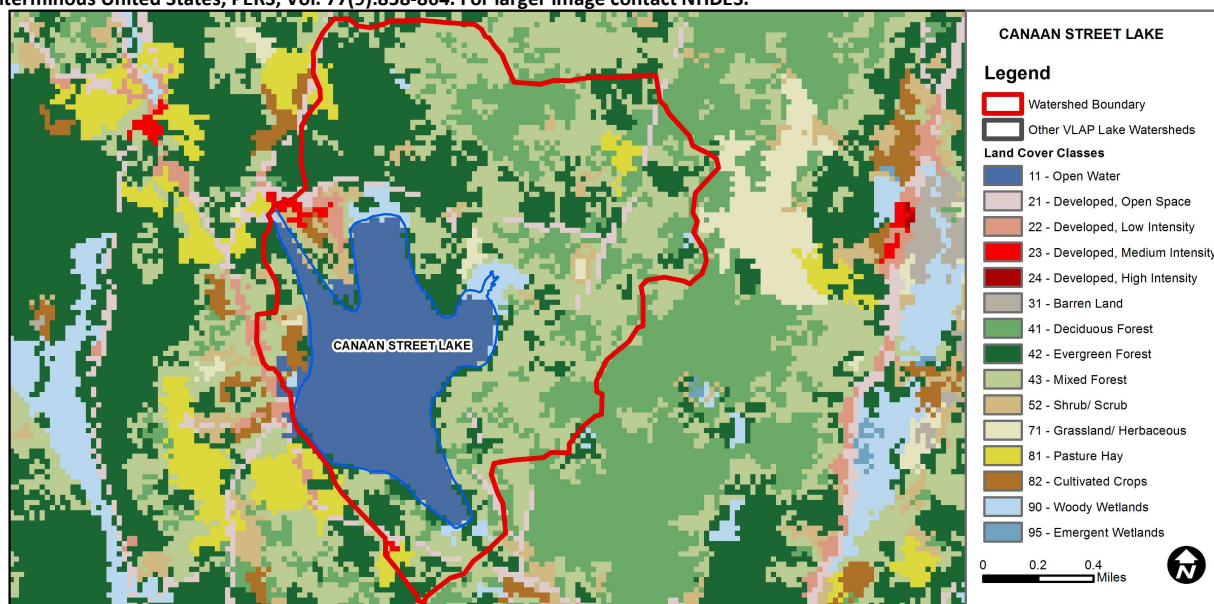
| Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	20.6	Barren Land	0	Grassland/Herbaceous	0.58
Developed-Open Space	2.26	Deciduous Forest	13.85	Pasture Hay	1.47
Developed-Low Intensity	0.78	Evergreen Forest	23.44	Cultivated Crops	0.77
Developed-Medium Intensity	0.46	Mixed Forest	31.11	Woody Wetlands	2.58
Developed-High Intensity	0	Shrub-Scrub	2.24	Emergent Wetlands	0

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics*)

- **CHLOROPHYLL-A:** Average chlorophyll levels were very low and well below the state median. Historical trend analysis indicates relatively stable chlorophyll with high variability between years.
- **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity levels were generally above average for NH lakes. Historical trend analysis indicates the epilimnetic conductivity has significantly increased (worsened) since monitoring began.
- **E. COLI:** Town beach E. coli levels were well below the state standard for public beaches.
- **TOTAL PHOSPHORUS:** Deep spot and tributary phosphorus levels were low in 2013. Historical trend analysis indicates relatively stable epilimnetic phosphorus with high variability between years.
- **TRANSPARENCY:** Lake transparency improved in 2013 and historical trend analysis indicates a significantly increasing (improving) transparency since monitoring began.
- **TURBIDITY:** Deep spot and tributary turbidity was low in 2013.
- **PH:** Average pH was sufficient to support aquatic life in 2013. Historical trend analysis indicates relatively stable epilimnetic pH with high variability between years.
- **RECOMMENDED ACTIONS:** The increasing conductivity levels are concerning. Conduct chloride monitoring to assess impacts of road salting. Work with local road agents to reduce the impacts of road salting on lake conductivity levels. Encourage local road agents and winter maintenance companies to obtain a Voluntary NH Salt Applicator license through the UNH Technology Transfer Center's Green SnowPro certification program.

Dissolved Oxygen Temperature Profile, June 2013
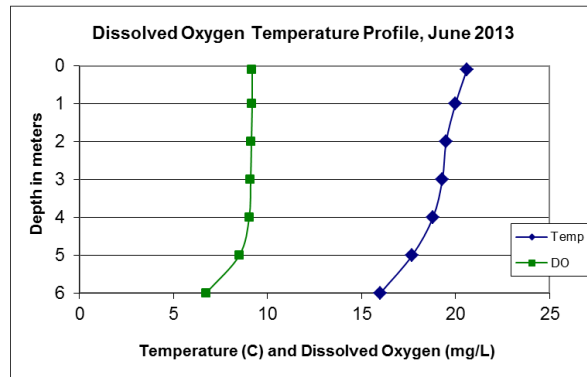
	Table 1. 2013 Average Water Quality Data for CANAAN STREET LAKE								
	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
Station Name	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Back Bay Rd			38.7		7			0.48	6.78
Epilimnion	12.9	1.03	73.6		5	4.65	5.55	0.75	7.38
Hypolimnion			78.2		5			0.78	7.39
Inlet At Fernwood Farms			70.9		4			0.91	7.40
Outlet			79.2		8			0.75	7.13
Town Beach				1					

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data highly variable.
Conductivity	Degrading	Data significantly increasing.	Transparency	Improving	Data significantly increasing.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.

Historical Trend Epilimnetic Conductivity and pH

Historical Deep Spot
Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data